

**WHAT IS CLAIMED IS:**

1. A transmitter for transmitting data using at least one pair of conductors, the transmitter comprising:

a transmitting signal monitoring unit operable to monitor at least one of electric voltages and electric currents applied to the pair of the conductors; and

a transmitting signal control unit operable to control at least one of the electric voltages and the electric currents applied to the pair of conductors according to signals outputted by said transmitting signal monitoring unit.

2. A transmitter as recited in claim 1, wherein said transmitting signal control unit controls at least one of the electric voltages and the electric currents applied to each of the conductors such that at least one of a difference between the electric voltages applied to the pair of conductors and a difference between the electric currents applied to the pair of conductors is reduced.

3. A receiver for receiving data using at least one pair of conductors, the receiver comprising:

a receiving signal monitoring unit operable to monitor at least one of electric voltages and electric currents applied to the pair of the conductors; and

a receiving status output unit operable to output data monitored by said receiving signal monitoring unit.

4. A transmitter for transmitting data to a receiver that receives data using at least one pair of conductors, the receiver comprising: a receiving signal monitoring unit operable to monitor at least one of electric voltages and electric currents applied to the pair of the conductors; and a receiving status output unit operable to output data monitored by the receiving signal monitoring unit,

the transmitter comprising: a transmitting signal control unit operable to control at least one of the electric voltages and the electric currents applied to the pair of conductors according to fed-back signals outputted by the receiving status output unit of

the receiver.

5. A transmitter as recited in claim 4, wherein said transmitting signal control unit controls according to the fed-back signals at least one of the electric voltages and the electric currents such that at least one of a difference of electric voltages and a difference of electric currents outputted from a pair of conductors connected to the receiver is reduced.

6. A balanced transmission apparatus using at least one pair of conductors, the balanced transmission apparatus comprising: a receiver and a transmitter,

the receiver comprising:

a receiving signal monitoring unit operable to monitor at least one of electric voltages and electric currents applied to the pair of the conductors; and

a receiving status output unit operable to output data monitored by said receiving signal monitoring unit,

the transmitter comprising:

a transmitting signal monitoring unit operable to monitor at least one of electric voltages and electric currents applied to the pair of the conductors; and

a transmitting signal control unit operable to control at least one of the electric voltages and the electric currents applied to the pair of conductors according to both signals outputted by said transmitting signal monitor unit and fed-back signals outputted by said receiving status output unit of the receiver.

7. A balanced transmission apparatus as recited in claim 6, wherein said transmitting signal control unit controls at least one of the electric voltages and the electric currents applied to the pair of the conductors such that at least one of a difference between the electric voltages applied to the pair of conductors and a difference between the electric currents applied to the pair of conductors is reduced, and

wherein said transmitting signal control unit controls according to the fed-back signals at least one of the electric voltages and the electric currents such that at least one

of a difference of electric voltages and a difference of electric currents outputted from the pair of conductors connected to the receiver is reduced.

8. A balanced transmission apparatus as recited in claim 6, wherein said transmitting signal control unit controls at least one of the electric voltages and the electric currents applied to the pair of the conductors such that at least one of a difference between the electric voltages applied to the pair of conductors and a difference between the electric currents applied to the pair of conductors is less than a predetermined threshold, and

wherein said transmitting signal control unit controls according to the fed-back signals at least one of the electric voltages and the electric currents such that at least one of a difference of electric voltages and a difference of electric currents outputted from a pair of conductors connected to the receiver is less than a predetermined threshold.

9. A transmitter for transmitting data using at least one pair of conductors, the transmitter comprising,

a unit operable to apply the pair of conductors at least one of electric voltages and electric currents,

wherein at least one of electric voltages and electric currents applied to one of the pair of the conductors is different from at least one of electric voltages and electric currents applied to another of the pair of the conductors.